



Louisville Metro Air Pollution Control District

Permit Application and Renewal Form AP-100E

Emission Calculations

Mail application to:
850 Barret Avenue
Louisville, KY 40204

OR

e-mail to:
airpermits@louisvilleky.gov

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd

Plant Name:

Plant ID:

Date of submission:

Emission Calculations

Instructions for Emission Calculations Form AP-100E

Emissions calculations for all air pollutants must be submitted as part of the permit application in order for the District to process the application. A copy of this form (or the applicant's form which provides the same information) must be completed for each emission unit identified in Form AP-100B. These calculations will be used to show actual and potential emissions for each emission point associated with the emission unit.

Plant Name Enter the company name exactly as it appears in Form AP-100A.

Plant ID This is the identification number assigned to the source by the District. If this application is for a new source for which an ID has not been assigned, this space may be left blank.

Emission Calculations

The following sample calculation is provided to illustrate to the applicant typical information that must be provided with the Title V application. Other PTE examples are shown on the APCD website, www.louisvilleky.gov/apcd.

Sample Calculation Assumptions:

- Company operates a #2 fuel-oil fired boiler with a maximum firing rate of 50 MMBTU/hour.
- The heat content of the oil is 145,000 BTU/gallon.
- The AP-42 emission factor for sulfur dioxide (SO₂) and #2 oil is 71 lb/(1000 gallons), based on a sulfur content of 0.5% in the oil.
- District regulation 7.06, section 5 defines an emission standard of 1.0 lb/MMBTU for this boiler.
- Normal operation for this facility is 16 hr/day, 5 days/week, 50 weeks/year. The company has no hourly or annual fuel restrictions and no limits on the hours of operation.

Potential to Emit (hourly):

$$\left(\frac{50 \text{ MMBTU}}{\text{hour}}\right)\left(\frac{1 \text{ gallon}}{145,000 \text{ BTU}}\right) = \left(\frac{344.8 \text{ gal}}{\text{hour}}\right)$$
$$\left(\frac{344.8 \text{ gal}}{\text{hour}}\right)\left(\frac{71 \text{ lb SO}_2}{1000 \text{ gal}}\right) = \boxed{\left(\frac{24.5 \text{ lb SO}_2}{\text{hour}}\right)}$$

Potential to emit (annual):

$$\left(\frac{24.5 \text{ lb SO}_2}{\text{hour}}\right)\left(\frac{8760 \text{ hr}}{\text{year}}\right) = \left(\frac{214,445 \text{ lb}}{\text{year}}\right) = \boxed{\left(\frac{107.2 \text{ tons}}{\text{year}}\right)}$$

Comparison to Standard:

$$\left(\frac{1 \text{ gallon}}{145,000 \text{ BTU}}\right)\left(\frac{71 \text{ lb SO}_2}{1000 \text{ gallons}}\right) = \left(\frac{71 \text{ lb SO}_2}{145 \text{ MMBTU}}\right) = \boxed{\left(\frac{0.49 \text{ lb SO}_2}{\text{MMBTU}}\right)}$$

This potential emission is below the standard of regulation 7.06 referenced above.